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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,072	01/19/2001	Hisham S. Abdel-Ghaffar	2925-0502P	6788

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EXAMINER	
CONNOLLY, MARK A	
ART UNIT	**PAPER NUMBER**
2115	9

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/764,072	ABDEL-GHAFFAR, HISHAM S.	
	Examiner	Art Unit	
	Mark Connolly	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-11 have been presented for examination.

2. The rejections are respectfully maintained and reproduced infra for applicant's convenience.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poulin US Pat No 6545979 in view of Thornberg et al [Thornberg] US Pat No 5757772.

5. Referring to claim 1, Poulin teaches the invention substantially including:

a. receiving, at a central node, timing information from a secondary node, the timing information based on a periodic timing scale [col. 2 lines 30-42]. The source is interpreted as a central node and the destination is interpreted as a secondary node.

b. converting the received timing information to a continuous time scale [col. 2 lines 40-42].

c. determining a time offset estimate between the central node and the secondary node [col. 2 lines 40-42].

Poulin teaches that the timing information indicates a round trip delay [RTD] which is the time it takes to transmit data from a central node to a secondary node and back to the central

node. Although an RTD inherently is the total delay of a downlink and an uplink, Poulin does not calculate the downlink and uplink times individually. Thornberg teaches that an RTD can be calculated by either calculating a total delay of both the uplink and downlink signals together, as is seen in the Poulin system, or the uplink and downlink delays can be calculated separately [col. 3 lines 6-11]. A packet delay including both an uplink and downlink delay is interpreted as a RTD. It would have been an obvious by design choice to modify the Poulin system to calculate the RTD by calculating the uplink and downlink delays separately rather than together because Thornberg teaches that both calculations would provide the same overall delay time.

6. Referring to claims 2-4, Poulin teaches measuring a first, second, third and fourth time in order to calculate the RTD [col. 2 lines 30-37 and 54-55]. It is obvious that the first and second times correspond to and are used to determine a downlink time and the third and fourth times correspond to and are used to determine an uplink time because the first and second times are measured during a downlink from a central node to a secondary node and the third and fourth times are measured during an uplink from the secondary node back to the central node. The RTD is interpreted as being in a continuous time scale and a time offset estimate.

7. Referring to claim 5, Thornberg teaches calculating a plurality of uplink and downlink times [col. 20 lines 15-22]. In order to determine an average uplink or downlink, a plurality of times would have to be measured. Therefore the Poulin-Thornberg system would obviously use these plurality of uplink and downlink delays to determine an average RTD.

8. Referring to claim 7, Poulin teaches sending a downlink frame including a first time to a secondary node and receiving an uplink frame including a first second and third time from the secondary node [col. 4 lines 30-37 and 54-55].

9. Referring to claim 8, Thornberg teaches setting a timeout period to determine if data has been lost in transmission [col. 6 lines 2-5].

10. Referring to claim 10, Thornberg teaches a cellular communications system in which a mobile device communicates with a radio network controller [col. 3 line 64 – col. 4 line 1, col. 3 lines 7-16 and 42-45]. It is obvious that the central node would be the radio network controller.

11. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poulin and Thornberg as applied to claim1-5 and 7-10 above, and further in view of Premerlani US Pat No 5958060.

12. Referring to claim 6, the Poulin-Thornberg system does not teach determining a minimum uplink and downlink delay. Premerlani teaches that the phase deviation between two nodes can be determined by determining the minimum round trip delay [col. 5 lines 27-32 and abstract]. This provides a means to synchronize a plurality of clocks. It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the minimum uplink and downlink delays to determine a minimum RTD in the Poulin-Thornberg system because it would provide a means to synchronize the central node and secondary node clocks as taught by Premerlani.

13. Referring to claim 11, the Poulin-Thornberg system teaches a method of determining uplink and downlink information between a central node and a secondary node as seen above but the system does not explicitly teach adjusting the timing information in the event of a time wraparound. Premerlani explicitly teaches that when determining a round trip delay (the total downlink and uplink delay), a time wraparound can occur which will cause the RTD value to be incorrect [col. 6 lines 13-24]. Therefore Premerlani teaches that compensations need to be made

to obtain the correct time [col. 6 lines 24-34]. It would have been obvious to one of ordinary skill in the art to adjust the downlink and uplink information for time wraparound and to determine the time offset between the central node and secondary node so that an accurate time offset can be obtained.

Response to Arguments

14. Applicant's arguments filed 2/19/2004 have been fully considered but they are not persuasive.

15. In the remarks, applicants argued in substance that (1) Poulin does not disclose or suggest converting any of the timestamps from a periodic to a continuous time scale and therefore does not disclose or suggest "converting the received downlink and uplink timing information to a continuous time scale" and therefore can not disclose or suggest "determining a time offset estimate between the central node and the secondary node based on the converted downlink and uplink timing information" (2) Thornberg does not disclose or suggest "converting the received downlink and uplink information to a continuous time scale" or "determining a time offset estimate between the central node and the secondary node as based on the converted downlink and uplink timing information" (3) the claimed invention provides the benefit of avoiding multiple adjustments to the time offset and provides a more efficient determination of the time offset.

16. In response to argument (1), Poulin does explicitly teach converting the timestamps from a periodic to a continuous time scale. In particular, the timestamps are generated at different periods of time, thus demonstrating that the timestamps initially exist in a periodic time scale. These timestamps are then converted to a continuous time scale by "subtracting the first

timestamp from the fourth timestamp and then subtracting therefrom the delta value" wherein the delta value is calculated from the second and third timestamps [col. 2 lines 30-42]. The calculated delay reflects the time delay between traveling from the central node to the secondary node then back to the central node without any additional delays in between. This calculated delay is continuous and therefore exists in a continuous time scale.

Furthermore, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In particular, Poulin teaches converting the timestamps to a continuous time scale and determining a time offset (RTD) between the central node and the secondary node based on the converted timing information as explained above. Although an RTD inherently is the total delay of a downlink and an uplink, Poulin does not calculate the downlink and uplink times individually. Thornberg teaches that an RTD can be calculated by either calculating a total delay of both the uplink and downlink signals together, as is seen in the Poulin system, or the uplink and downlink delays can be calculated separately [col. 3 lines 6-11]. It would have been an obvious by design choice to modify the Poulin system to calculate the RTD by calculating the uplink and downlink delays separately rather than together because Thornberg teaches that both calculations would provide the same overall delay time.

17. In response to argument (2), again one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Poulin teaches converting the timestamps to a continuous time scale

and determining a time offset (RTD) between the central node and the secondary node based on the converted timing information as explained above. Although an RTD inherently is the total delay of a downlink and an uplink, Poulin does not calculate the downlink and uplink times individually. Thornberg teaches that an RTD can be calculated by either calculating a total delay of both the uplink and downlink signals together, as is seen in the Poulin system, or the uplink and downlink delays can be calculated separately [col. 3 lines 6-11]. It would have been an obvious by design choice to modify the Poulin system to calculate the RTD by calculating the uplink and downlink delays separately rather than together because Thornberg teaches that both calculations would provide the same overall delay time.

18. In response to argument (3) that "the claimed invention provides the benefit of avoiding multiple adjustments to the time offset...and provides a more efficient determination of the time offset," a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Connolly whose telephone number is (703) 305-7849. The examiner can normally be reached on M-F 8AM-5PM (except every first Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C Lee can be reached on (703) 305-9717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Connolly
Examiner
Art Unit 2115

mc
April 2, 2004

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